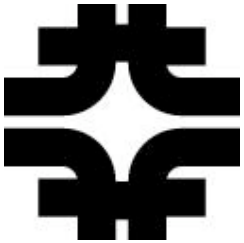


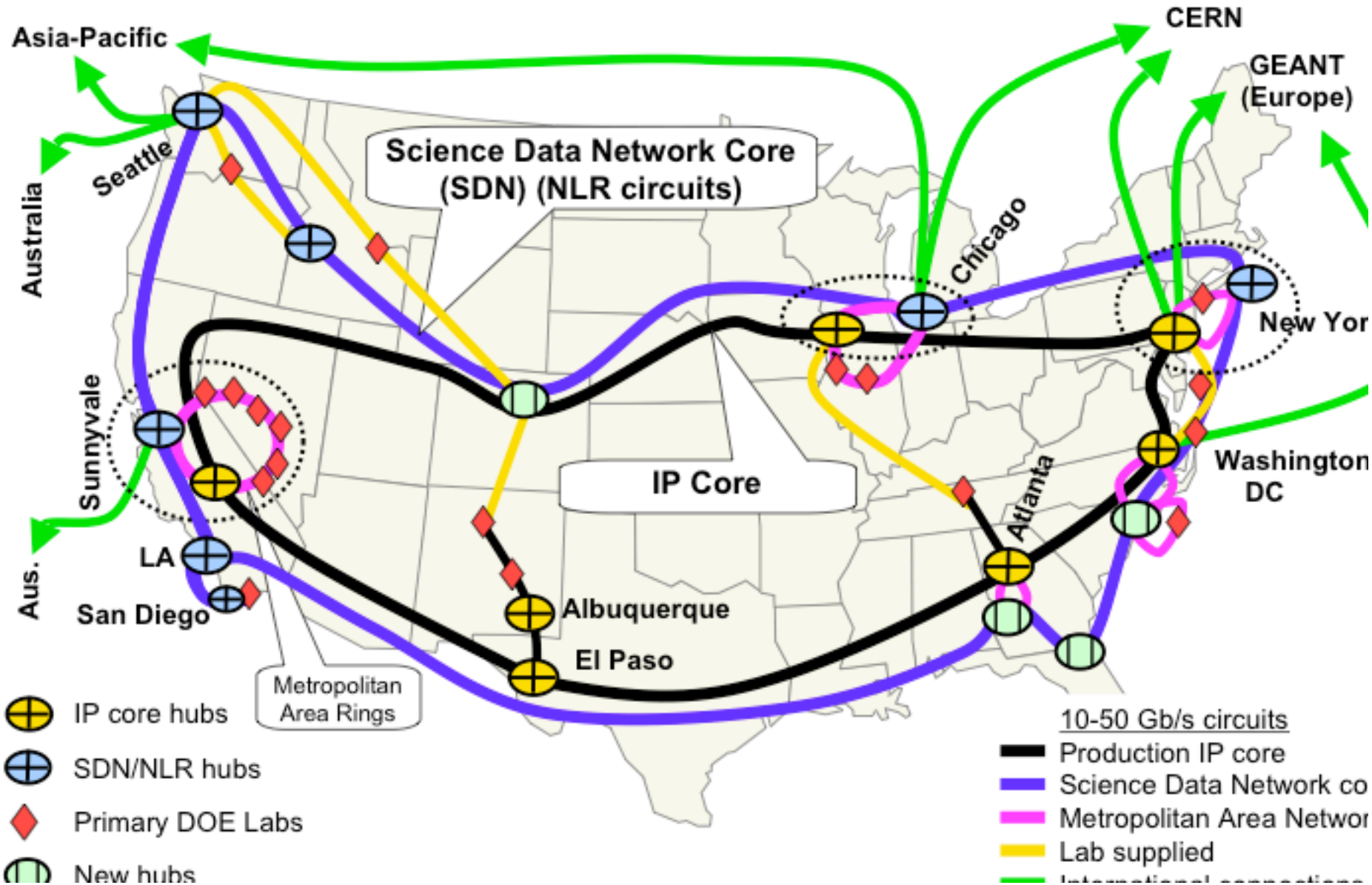
OSG Aummary

D. Petravick

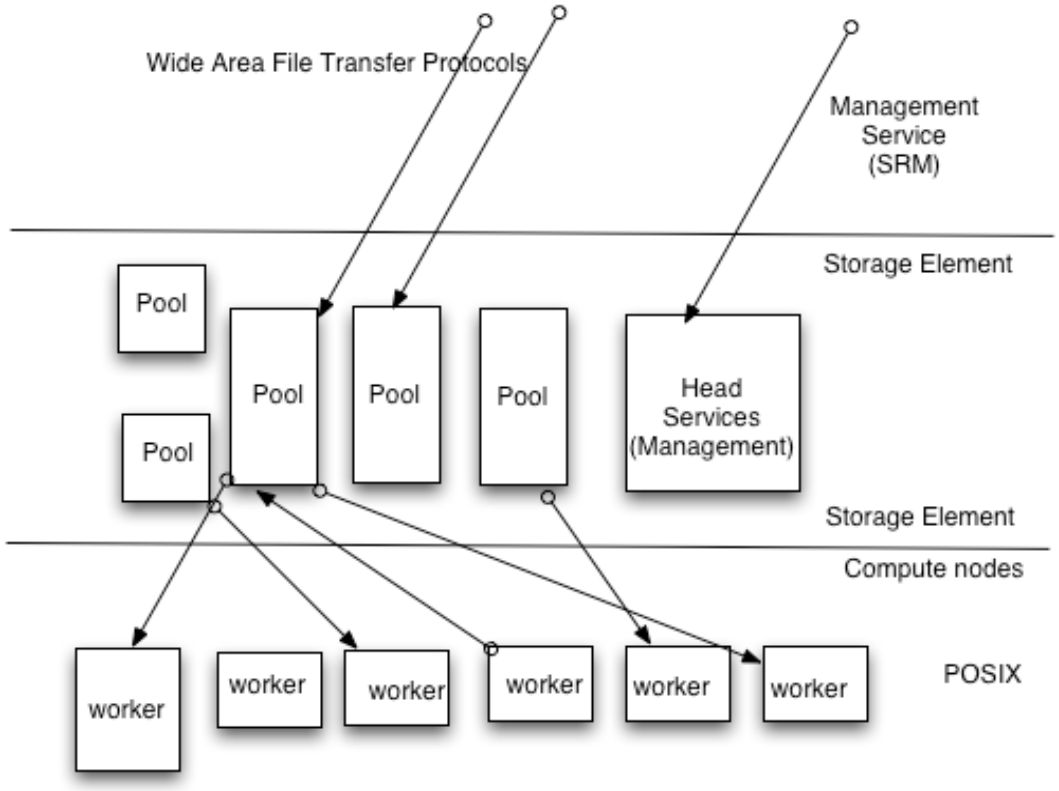
SRM Collaboration Meeting

JLAB, August 15, 2005

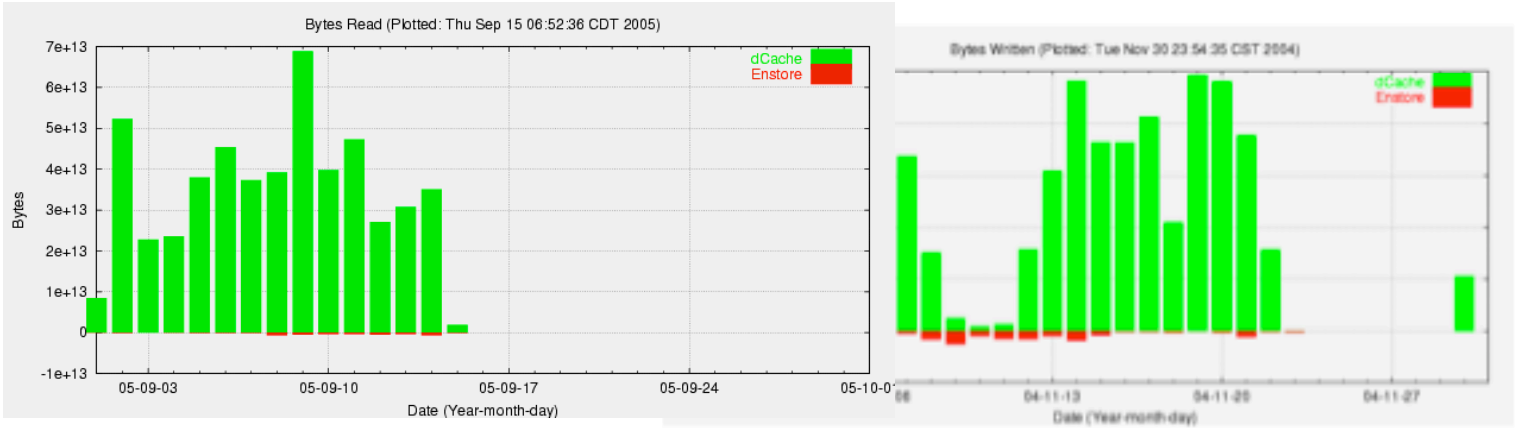
ESnet Target Architecture:
IP Core+Science Data Network Core+Metro Area Rings



OSG Storage Element



SE and SC's



- Performance on local and grid Sides.
- Ease of use shock (if clusters are large error amplifiers, what are storage clusters)

Site Service Choices

Tier 0/1s

- CERN
  - Storage: Castor-2/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC Oracle
  - Does CERN participate as T1?
- FNAL
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL Globus RLS
- CNAF
  - Storage: Castor-1/SRM
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC Oracle
- RAL
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC Oracle
- CCIN2P3
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC Oracle
- PIC
  - Storage: Castor-1/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC MySQL
- FZK
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL LFC Oracle
- ASCC
  - Storage: Castor(-1?)/SRM
  - Transfers: PhEDEx/SRM (srmcp)?
  - File catalogue: POOL LFC Oracle

Site Service Choices

Tier 2s

- US: Florida, Wisconsin, San Diego, Caltech (+ Purdue, Nebraska, MIT?)
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL (POOL Globus RLS later at some?)
- Italy: Legnaro
  - Storage: LCG DPM/SRM
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- Spain: CIEMAT
  - Storage: Castor-1/SRM
  - Transfer: PhEDEx/SRM (srmcp) (Globus as fallback)
  - File catalogue: POOL MySQL
- UK: Imperial
  - Storage: dCache/SRM
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- Germany: DESY
  - Storage: dCache/SRM (+ tape)
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL (?)
- France: ?
- Taiwan: ?

What We Really Used
Tier 0/1s

- CERN
  - Storage: Castor-1/SRM
  - Transfers: None
  - File catalogue: textfile + grep
- FNAL
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- CNAF
  - Storage: Castor-1/SRM / SE
  - Transfer: PhEDEx/SRM / globus-url-copy
  - File catalogue: POOL MySQL
- RAL
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- CCIN2P3
  - (No CMS transfers so far)
- PIC
  - Storage: Castor-1 (not SRM)
  - Transfers: PhEDEx/Globus (globus-url-copy)
  - File catalogue: POOL MySQL
- FZK
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- ASCC
  - Storage: Castor-1/SRM
  - Transfers: PhEDEx/Globus (globus-url-copy)
  - File catalogue: POOL MySQL
- All
  - Production networks

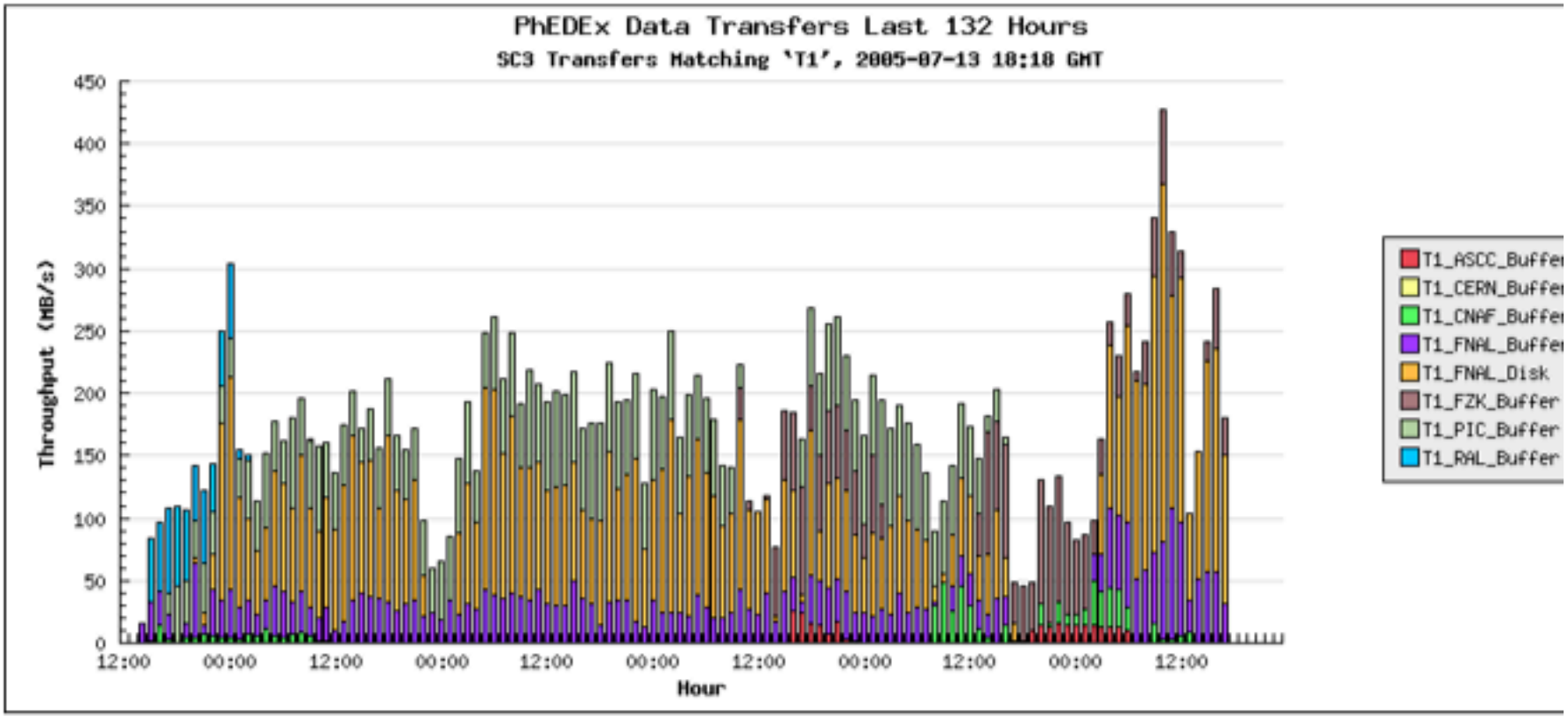
What We Really Used

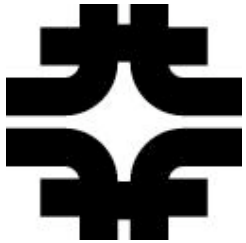
Tier 2s

- US: Purdue, Nebraska, Wisconsin (Florida, San Diego, Caltech)
  - Storage: dCache/SRM
  - Transfers: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL (POOL Globus RLS later at some?)
  - No transfers at FL, UCSD, Caltech
- Italy: Legnaro
  - Storage: LCG DPM/SRM
  - Transfer: PhEDEx/Globus
  - File catalogue: POOL MySQL
  - Transfers for one day
- Spain: CIEMAT / IFCA
  - Storage: Castor-1/SRM
  - Transfer: PhEDEx/SRM (srmcp) (Globus as fallback)
  - File catalogue: POOL MySQL
- UK: Imperial
  - Storage: dCache/SRM
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- Germany: DESY
  - Storage: dCache/SRM (+ tape)
  - Transfer: PhEDEx/SRM (srmcp)
  - File catalogue: POOL MySQL
- France: ?
- Taiwan: ?

Achievements

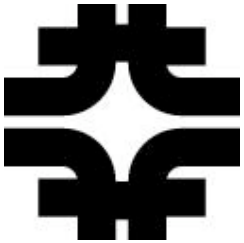
- Drilling down into the better parts (T1)





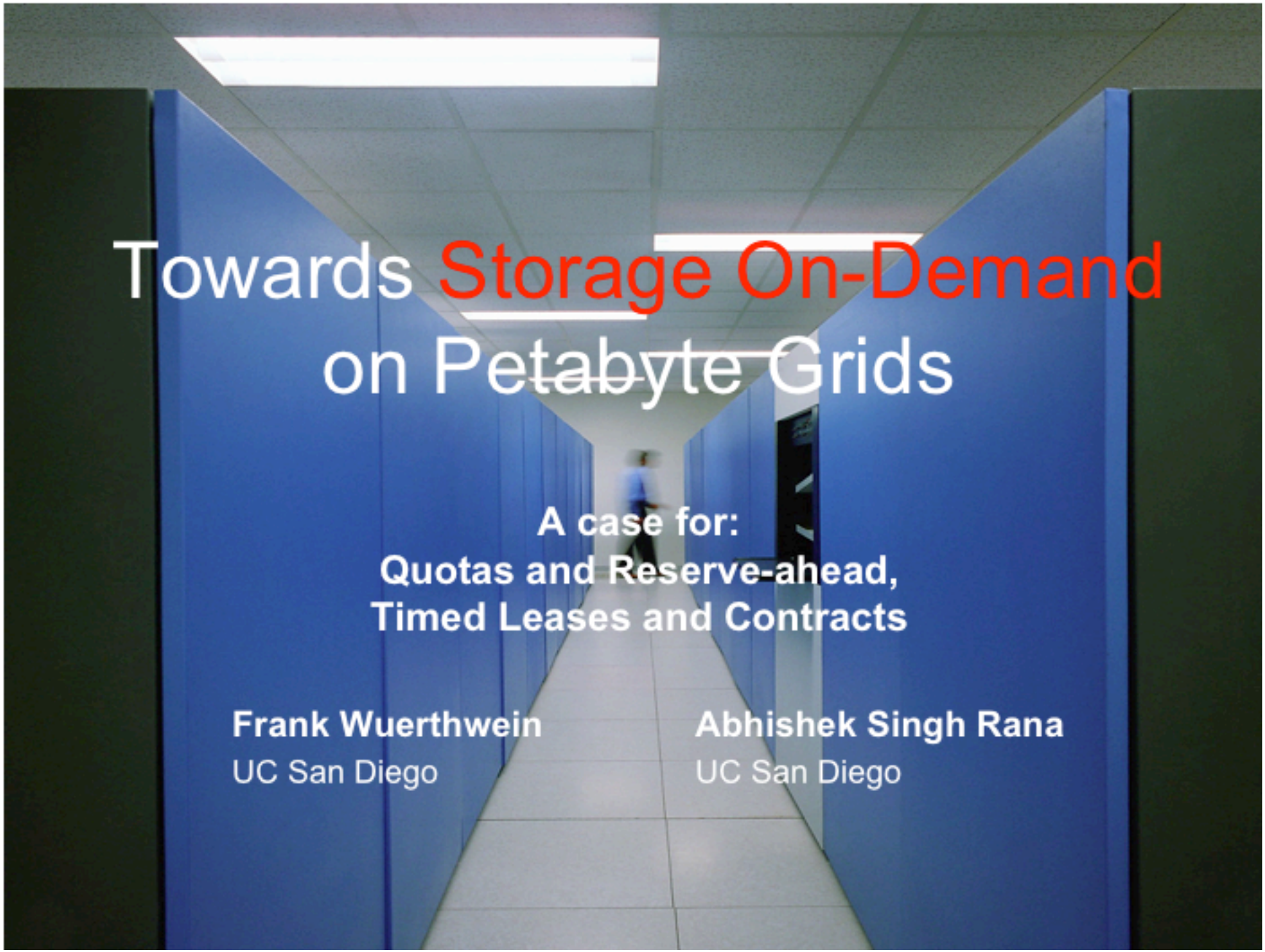
OSG data areas

- Inhertited from Grid 3.
- $APP, $WN_TMP, $TMP, $DATA.
- Definitions shown did not seem crisp.



OSG data areas (Proposed)

- $SITE_READ visible to all WN's, Read only data sets. "posix"
- $SITE_WRITE visible to all WN's, read-write data sets "posix"
- $APP -- files not installed by a job,
- $WN_TMP -- programs and data installed by software distribution mechisms.



Towards Storage On-Demand on Petabyte Grids

A case for:
Quotas and Reserve-ahead,
Timed Leases and Contracts

Frank Wuerthwein
UC San Diego

Abhishek Singh Rana
UC San Diego

Case List

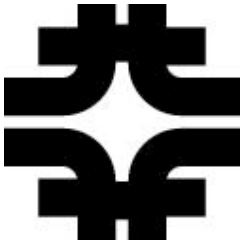
Priority 0
- Reserve-ahead: File transfer level (~Implicit Reservation)

Priority 1
- Bulk Quotas: VO level (~Explicit Partitioning)
- Fine Quotas: Individual User level (~generally Oversubscribed)

Priority 2
- Reserve-ahead (from a Quota): User level (~Explicit Reservation)
- Reserve-ahead (from a Quota): VO level (~Explicit Reservation)

Priority 3
- Hierarchical and Cumulative Exhaustion of Quotas

Priority 4
- Storage space accrual and Time
- Timed Leases & Contracts: VO/User level
- Timed Leases & Contracts: Grid/Enterprise level



Summary

- OSG has a bottoms up approach
  - Blueprint document.
  - Aware of its differences from EGEE.
- Trying to Emerge as a data-intensive Grid
- Deployment:
  - Successful SE/SRM deployments for CMS, and Atlas.
    - Cannot tell this from gridcat.
  - No success (yet) for the OSG in general.